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ABSTRACT

Resources developed by "Campus Compact," a coalition of over 550 colleges and universities established to create and enhance service learning opportunities for students, are presented in this handbook for mathematics and science faculty. A brief introduction defines service learning and provides a continuum of types of service learning, such as one-day fundraising tasks, class-related assignments, volunteer tutoring, and paid internships. The first section provides sample documents used in administering programs, including a development form for integrating service learning into a course, a reasoning objectives matrix, a student application, a learning hour report, and an evaluation form. The next section underscores the importance of reflection in the service learning process, offering models and guidelines for facilitating reflection among participants. Selected resources are provided in the following section, and a sample analysis of the effects of tutoring on academic achievement. The final section contains sample syllabi designed to assist instructors who wish to integrate a service learning component into their math and science courses. Contains 14 references. (MPH)

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ED 397 930

Mathematics and Science Faculty Service Learning Handbook

- ✓ Sample Documents
- ✓ Reflection
- ✓ Selected Resources
- ✓ Sample Syllabi

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JC 960 569

SERVICE LEARNING

CAMPUS COMPACT, The Project for Public/Community Service is a coalition of over 550 colleges and universities established to create and enhance public service opportunities for students and to develop an expectation of service as an integral part of the college experience. Many colleges have their own Campus Compact Project or Center for Service-Learning to systematically involve and support students in these educational and important public service experiences.

THE MISSION

The Center for Service-Learning strives to make service an integral part of students' education at the college creating an expectation of service as an intentional part of the collegiate experience.

SERVICE LEARNING DEFINED

The following four criteria were developed by the National Community Service Act of 1990 to define service learning:

- Under which students learn and develop through active participation in thoughtfully organized service experiences that meet actual community needs and that are coordinated in collaboration with the school community;
- That is integrated into the students' academic curriculum or provides structured time for a student to think, talk, or write about what the student did and saw during the actual service activity;
- That provides students with opportunities to use newly acquired skills and knowledge in real-life situations in their own communities; and
- That enhances what is taught in school by extending student learning beyond the classroom and into the community and helps to foster the development of a sense of caring for others.

CONTINUUM OF SERVICE AND LEARNING EXPERIENCE

1. Co-curricular community service: Episodic, short duration or special projects, usually 1-10 hours for specific service event.
- A Taste of Service Day
- Fundraising for runaway youth shelter
- Beach clean up
- Clean up hunger event
- Aids Awareness Fest

2. Class related, observational assignments: Part of regular course assignment, 1-6 hours for points or percentage of grade. Students are oriented to service settings, societal concerns.
- Interview homeless service providers and prepare information speech
- Visit (3) mental health agencies and prepare reflective report

3. Community / Volunteer Service
- Volunteer in hospital for (1) year, 12 hours, monthly
- Tutor a child for (2) hours weekly for 1 semester
- Serve meals to the homeless once per week for (3) months

4. Service - Pay: Student serves in public service setting while receiving small stipend, scholarship, or pay. 2-12 hours weekly for semester.
- Community service/learning for work study eligible students
- Mini-grant school mentoring project which pays students minimum wage to tutor youth
- $800 scholarship for outstanding student humanitarian

5. Service - Learning Options Field Experiences: Service - learning options in regular classes usually 15-30 hours of service plus reflective writing tool for 5-40% of course grade. Often in lieu of term paper, essays or exam. Students perform service as a way to gather, test, and apply content and skills of existing courses.
- Biology: 30 hours of service and essay for 20% of grade
- Psychology: 20 hours of service and journal for 20 additional class points
- Math: 16 hours of tutoring to drop the lowest test grade

6. Community Service Credit: Student contracts with instructor or service-learning office. Variable credit hours depending upon service and reflective requirements (flexible and individualized).
- Designated Helper for 1-4 credit hours, students can contract with instructor to do service-learning project. Independent study mechanism with service focus

7. Introductory Community Service Courses: Community/public service is combined with classroom work to provide information, skill building, reflection, generalizing principles, assessment methods to help students serve and learn more effectively. Adaptable for various service-learning applications.
- Human Service Experience: (1-3) credit hour elective for service, seminars, and reflection

- Also used as additional credit in some disciplines

8. Service-Learning Courses: In-depth theoretical and practical courses which allow for maximum integration of service and classroom work. Utilized by some departments, programs as core option. Reflection, action, skill building, examination of theory/practice of citizenship
- Community Involvement: (3) credit hours of field experience combined with (32) hours of seminars

9. Professional Development Offerings: Seminars/Workshops/Courses offered to key constituents of service-learning: Instructors, student leaders, agency/service site personnel. Provide knowledge, skills for volunteer and service-learning personal and community enhancement.
- Volunteer Leadership: A lifelong learning course for supervisors of volunteers, agency personnel, and student volunteer program leaders (30 hours of classroom work)
- Teaching for Service Seminars: Inservice for instructors who utilize service-learning pedagogies. 15 hours of action and reflection learning strategies (graduate credit available)
- Supervisor as Educator Workshops: Periodic seminars for agency supervisors of volunteers and students (usually 2-8 hours of training)
- Service Action Leadership team: Leadership opportunities and training for students

10. Internships: In-depth experiences usually toward the end of coursework. 6-20 hours weekly, but can be full time (usually course prerequisites to enter). Individually arranged and tailored to student need.
- Media Internships
- International service-learning
- Washington Intern Program
- Other national, global immersion experiences
- Medical field related Internships

SAMPLE DOCUMENTS

DEVELOPMENT FORM
FOR
INTEGRATING SERVICE-LEARNING/PUBLIC SERVICE
INTO A COURSE/SEMINAR

I. Course/Seminar: _____

Description:

II. Course/Seminar Objectives Related to Service-Learning/Public Service

1. Knowledge Objectives- What is the subject area and content that the students will master through this community based experience?

2. Skills Objectives- What skills will the students be expected to develop? Writing? Problem Solving? Critical thinking? etc.

3. Attitudes/Values- What attitudes/values will the students be expected to develop?

James Madison University
Harrisonburg, Virginia 22807
(703) 568-6366

REASONING OBJECTIVES MATRIX

COURSE/SEMINAR_____

DEVELOPMENT AREAS	GOALS & OBJECTIVES	ACTIVITIES	EVIDENCE/EVALUATION
NEW KNOWLEDGE ACQUIRED	1. 2. 3.		
NEW SKILLS MASTERED	1. 2. 3.		
ATTITUDES/VALUES	1. 2. 3.		
OTHER AREAS:	1. 2. 3.		

James Madison University
Harrisonburg, Virginia 22807
(703) 556-5355

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CSL APPLICATION

CENTER FOR SERVICE-LEARNING (Campus Compact)
1519 Clearlake Road • Cocoa, FL 32922
(407) 632-1111, ext. 2410

DATE _____

(Please print and fully complete)

NAME _____ STUDENT NUMBER _____ DATE OF BIRTH _____

ADDRESS _____ PHONE NUMBER ( ) _____
Street City State Zip Area Code

ETHNIC GROUP: (for statistical purposes): ❑ Asian/Pacific Islander ❑ American Indian/Alaskan Native ❑ Black (Not Hispanic Origin) ❑ Hispanic ❑ White (Not Hispanic Origin)

ACADEMIC MAJOR _____ DATE OF GRADUATION (expected) _____ ADVISOR'S NAME _____

CLASS LEVEL: ❑ FR ❑ SO ❑ OTHER ❑ ADULT EDUCATION ❑ NON-STUDENT CAREER INTENT _____

ARE YOU VOLUNTEERING TO SATISFY ACADEMIC CREDIT AND/OR COURSE OPTIONS? ❑ YES ❑ NO

NAME OF COURSE _____ INSTRUCTOR _____

INDICATE REASON *WHY* YOU ARE VOLUNTEERING _____

HOW DID YOU LEARN ABOUT VOLUNTEERING WITH THE CENTER FOR SERVICE-LEARNING (CAMPUS COMPACT)

❑ *CAPSULE* ❑ FRIEND/VOLUNTEER ❑ INSTRUCTOR ❑ STAFF ❑ RECRUITMENT TABLE ❑ NEWSPAPER ❑ POSTER/FLYER ❑ TV/RADIO ❑ EMPLOYER ❑ OTHER

EDUCATION BACKGROUND _____ SKILLS, INTERESTS _____

PREVIOUS VOLUNTEER WORK _____

ARE YOU INTERESTED IN: ❑ DIRECT SERVICE (2-3 hours weekly) ❑ VOLUNTEER LEADERSHIP/COORDINATION ❑ SHORT TERM (one shot assignment)

LIST THE DAYS AND TIMES YOU ARE AVAILABLE TO VOLUNTEER _____

HOW LONG OF A COMMITMENT COULD YOU MAKE: ❑ ONE SEMESTER ❑ TWO SEMESTERS ❑ ONE YEAR

DO YOU HAVE YOUR OWN TRANSPORTATION? ❑ YES ❑ NO

YOUR VOLUNTEER PROGRAM PREFERENCE, IN ORDER OF CHOICE (directory, staff, own source)

1. _____ 2. _____

OFFICE USE ONLY: ❑ CHECK IF STUDENT COORDINATOR

OFFICE USE ONLY
❑ INSURANCE
❑ CONFIRMATION
❑ CERTIFICATE
❑ THANK YOU
❑ FOLLOW UP

PROGRAM REFERRAL	PROGRAM _____	PROCESSED APPLICATION DROPS
1ST _____	❑ ASSIGNED ❑ DROPPED	❑ AFTER ASSIGNED
Staff Initials Date	Initials Date	Initials Date
2ND _____	TRANSFER TO _____	❑ END-OF-TERM
Initials Date	Term Initials Date	Initials Date
Comments _____	Comments _____	Comments _____

CS-01 1M-0794

BCC IN AN EQUAL ACCESS/EQUAL OPPORTUNITY INSTITUTION.

BREVARD COMMUNITY COLLEGE
CENTER FOR SERVICE-LEARNING

STUDENT VOLUNTEER/SERVICE LEARNING HOUR REPORT

Please use this form to record the number of volunteer hours per week. Turn these reports in weekly to your volunteer supervisor. At the end of your volunteer commitment, see bottom of page for distribution.

VOLUNTEER NAME_____ VOLUNTEER SUPERVISOR_____

DATE	M	T	W	R	F	S	S	TOTAL # HOURS	SERVICE PROVIDED	SUPERVISOR'S APPROVAL

Ending Date: Total Hours Assignment: Supervisor's Signature:

DIST: WHITE (FACULTY MEMBER); YELLOW (CENTER FOR SERVICE-LEARNING; PINK (STUDENT COPY)
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CS-04 750-1094

BREVARD COMMUNITY COLLEGE
CENTER FOR SERVICE-LEARNING

FINAL EVALUATION

OF STUDENT FOR ACADEMIC CREDIT

STUDENT:

AGENCY/ORGANIZATION:

INSTRUCTOR:

SUPERVISOR'S SIGNATURE:

COURSE:

AGENCY TELEPHONE:

TIME FRAME

TOTAL HOURS VOLUNTEERED:

	EXCELLENT	VERY GOOD	AVERAGE	BELOW AVERAGE	POOR	CANNOT RATE
ATTENDANCE						
COOPERATION						
ACCEPTANCE OF RESPONSIBILITY						
CONCERN FOR NEEDS OF COMMUNITY AND CLIENTS						
COMPLETION OF ASSIGNMENTS						
DEPENDABILITY						
RESOURCEFULNESS, CREATIVITY						
COMMUNICATION SKILLS; LISTENING, SPEAKING, WRITING						
TIME UTILIZATION						
EAGERNESS TO LEARN						
ABILITY TO SET AND MEET OBJECTIVES						
ADAPTABILITY						
OVERALL EVALUATION OF PERFORMANCE						

OTHER COMMENTS: (USE BACK OF PAPER IF NEEDED)

Thank you very much for your efforts. The student will go over the evaluation with the instructor. I appreciate your involvement in the learning process.

DIST: WHITE (FACULTY MEMBER); YELLOW (CENTER FOR SERVICE-LEARNING; PINK (STUDENT COPY)
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CS-03 505-0195

REFLECTION

REFLECTION

Reflection is part of the process by which the student's experiences are re-examined through various techniques to engage them in observing, thinking, talking, listening, questioning, writing, and reading. The decision as to which reflection method will be used by the teacher/leader to engage the group in this critique depends upon what type of outcome is desired for the students doing the reflecting. Each type of reflection carries with it different outcomes. Some training and understanding of how people learn is necessary to fully utilize the value of reflection.

The Four Basic Methods of Reflection

Reading and Reflection

Basically, every time anyone picks up a book to read they are taking on the task of reflecting. How many times have you been reading a book when a particular sentence or incident strikes you and you put the book down and begin thinking about what you read? This technique helps focus learning in specific areas.

Reflective Writing

A. Journals - Most common type or reflection.
B. Directed Reflective Questioning: "How did your project help the community?"

Oral Group Reflection

There are a number of variations in this model that change how the session is conducted. Are the experiences of the group the same or different? Who takes the leadership role in the discussion? Examples of questions:

A. Feelings
   What did you like most about today's conference?
   What did you like least?
B. Cognitive
   "Student as Expert Model" (Betty Stoner)
   Each student becomes the expert of specific fields of learning.
   Learning to Learn - Use the "Stop the Action Technique" and learning guideposts.

Observational Reflection

Works of art promote reflection as does all types of unusual objects. These reflective sessions are particularly helpful in increasing cognitive learning.

Facilitator Worksheet

Most failures in cognitive reflective teaching sessions result from an inability of the facilitator to stimulate conversation. There can be little constructive learning in a session that lacks concentration, enthusiasm and purpose stifled by a lack of understanding as to how to stimulate conversation. Listed below are certain phrases and sentences meant to stimulate meaningful dialogue. These are essential tools for the facilitator. Use them as they appropriately fit the circumstance of the reflection session.

Questions that Prompt Reflection

Can you talk more about that?
Why do you think that happens?
What evidence do you have about that?
What does this remind you of?
Do you see a connection between this and _____?
How else could you approach that?
What do you want to happen?
How could you do that?

Affirmation that Supports Reflection

You can find a way that works for you when you are ready.
I like talking like this.
You can grow at your own pace.
You can experiment and explore. I will help you.
You can learn from what doesn't work for you.
Your reflections are important.

Commentators Worksheet

The commentator must listen carefully during group oral reflection sessions. For most teachers, who have been trained to talk this is the most difficult skill to learn. Quality conversation is what would be fostered by commentators not quantity conversations.

Key to the reflection session is to promote dialogue (*openness*) and not discussion (*closed*). Commentators must be ready to stop the action when opportunities present themselves that teach critical thinking and problem solving skills. This means using leaning guideposts to push the conversation from affective learning to cognitive learning. In addition, the techniques of memory recall must be used where appropriate. By processing these techniques over a period of time the commentator will actually be teaching critical thinking skills, analysis and evaluation of the experience. This process is not only cognitive but also, once understood by the student, allows him or her to become a thinking, vital member of society, who can ferret out information for him or herself.

Guideposts to critical thinking skills are:

1. Be ready to explain the distinction between discussion and dialogue.
2. Understand analytical vs. relational styles of thinking.
3. Build a structure for memory.
4. Categorize.
5. Moving from experience to the abstract.
6. Stretch and reach for self-efficacy.
7. Be ever mindful of the issues of reflection vs. impulse.
8. Take time during each session to celebrate the sounds of literary thought.
9. Recognize that finding the courage to have an idea that diverges from the group consensus is a first step toward independent thinking.

The ***reflective instrument*** should be:

meaningful

a means to explore, as well as ventilate

an opportunity for free expression

a directed chronicle of events

structured enough to motivate learning

Examples of reflective instruments include:

journals, or chronicles

sketches

photographic compositions

a series of essays

Reflective instruments should be used as a basis for the development of meaningful dialogue with other service-learning participants

INNER CIRCLE/OUTER CIRCLE

An effective means of service-learning reflection is to do a fishbowl feedback technique. Students who are service-learners form the inner circle and talk about their service experience utilizing directed questioning by faculty/staff members, e.g., hierarchy of questions (Bloom's taxonomy), learnings/feelings, relatedness to course. Students in the outer circle are asked to listen intently, especially for what students are saying about *learnings, feelings, trends, and principles*.

Twenty - thirty minutes is enough time. This is an excellent means to incorporate more reflection into a S-L option in a regular class. Both circles can participate. This can serve as a tremendous awareness experience and recruitment method for non service-learners.

Another adaptation is for service-learners to give short oral presentations about their experience and then do small group exercises.

Also an effective method is to have students write out responses to specific debriefing questions that span the range of Bloom's taxonomy. They then utilize their answers to inform their group or oral presentations.

PYRAMID OF REFLECTION

An informational exercise to enable students to reflect on various critical components of the service-learning experience. Students can concentrate on each level as they progress through their service experience. Self directed questioning can be utilized to help students frame their day to day service experience or anchor their written reflective work and oral presentations. Examines the importance of all three levels in analyzing the impacts of service-learning.

SELECTED RESOURCES

SELECTED RESOURCES

Angelo, Thomas A. and K. Patricia Cross. Classroom Assessment Techniques: A Handbook for College Teachers (2nd Edition), San Francisco: Jossey-Bass publishers, 1993.

Barber, Benjamin and Richard Battistoni. Education for Democracy. Dubuque, IA: Kendall/Hunt Publishing, 1993.

Bellah, Robert N., et al. Habits of the Heart: Individualism and Commitment in American Life. New York: Harper and Row, 1985.

Bellah, Robert N., et al. Individualism and Commitment in American Life: Readings on the Themes of Habits of the Heart. New York: Harper and Row, 1987.

Bellah, Robert N., et al. The Good Society. New York: Alfred A. Knopf, 1991.

Cairn, Rich and James Kielsmeier, (eds.) Growing Hope: A Sourcebook on Integrating Youth Service Into the School Curriculum, Minneapolis: National Youth Leadership Council, 1991.

Collins, Deborah. Teaching for Service: A Faculty Guide. Cocoa FL: Brevard Community College, 1991.

Conrad, Dan and Diane Hedin. Youth Service: A Guidebook for Developing and Operating Effective Programs. Washington, D.C.: Independent Sector, 1987.

Conrad, Dan, and Hedin, Diane. Youth Service, A Guide for Student Reflection in Youth Participation Programs. Washington, D.C.: Independent Sector, 1987.

Dass, Ram, and Paul Gormon. How Can I Help? Stories and Reflections on Service. New York: Alfred A. Knopf, 1985.

Delve, Cecelia, et al. Community Service as Values Education. Raleigh: Jossey-Bass, Inc., 1990.

Eastep, Mary A. and Henry, Roger. Supervisor as Educator: An Agency Guide for Working with College Student Service-Learners. Cocoa, FL: Brevard Community College, 1992.

Galura, Joseph and Jeffrey Howard, editors. Praxis I: A Faculty Casebook on Community Service Learning. Ann Arbor, Michigan: University of Michigan Press, 1993.

Galura, Joseph and Jeffrey Howard, editors. Praxis II: Service-Learning Resources for University Students, Faculty, and Staff. Ann Arbor, Michigan: University of Michigan Press, 1993.

This section contained copyrighted materials that have therefore been deleted.

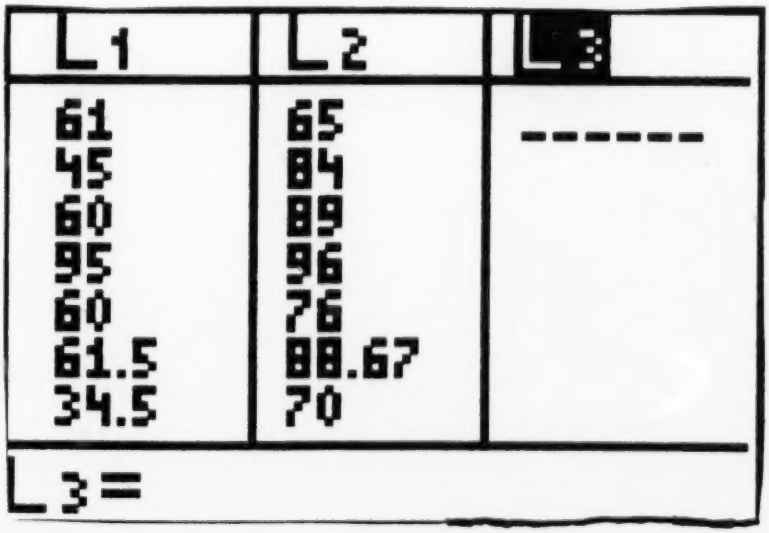
Please see:

Howard, Jeffrey. *A Faculty Casebook on Community Service-Learning Praxis, Volume I.* "Ten Principles of Community College Learning." Ann Abor, MI: OCSL Press, University of Michigan Office of Community Service Learning, 1993.

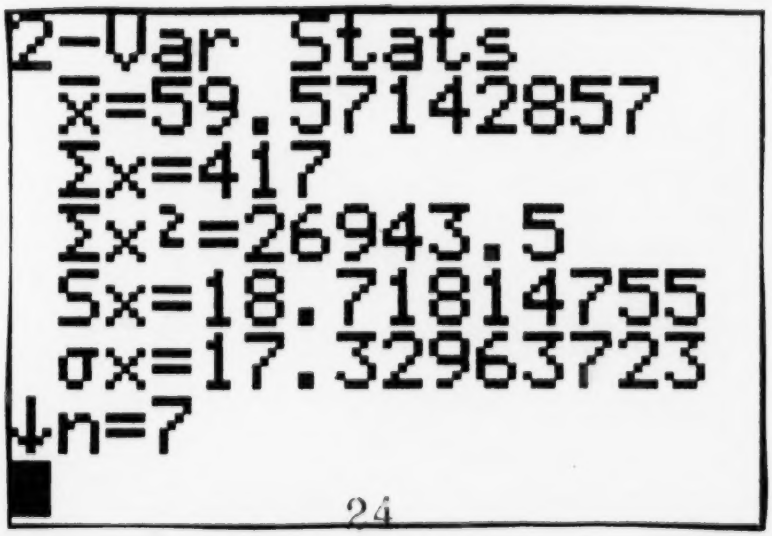
Wozniak, Jacci. "Learning Mathematics by Helping Others." *Dimensions in Math*, Fall 1995, pp 16-19.

SERVICE LEARNING ANALYSIS

Students who took part in a service learning option to tutor in College Algebra at Brevard Community College showed a statistically significant increase in academic performance in the course. The analysis illustrates the potential effects tutoring can have on the tutors academic achievements. A one-sided t-test for a dependent sample was used to analyze the test scores. The null hypothesis stated that there exists no difference between the means before and after tutoring. The alternate hypothesis indicates that the initial mean will be significantly lower than the mean after tutoring. In other words, tutoring will have a significant effect upon increasing students test scores. Alpha = 0.005 was used to determine the critical t-value of 3.707. The collected data is displayed in figure 1. The test average prior to the service learning option is listed under L1, the test average after participating in the service learning option to tutor is listed under L2.

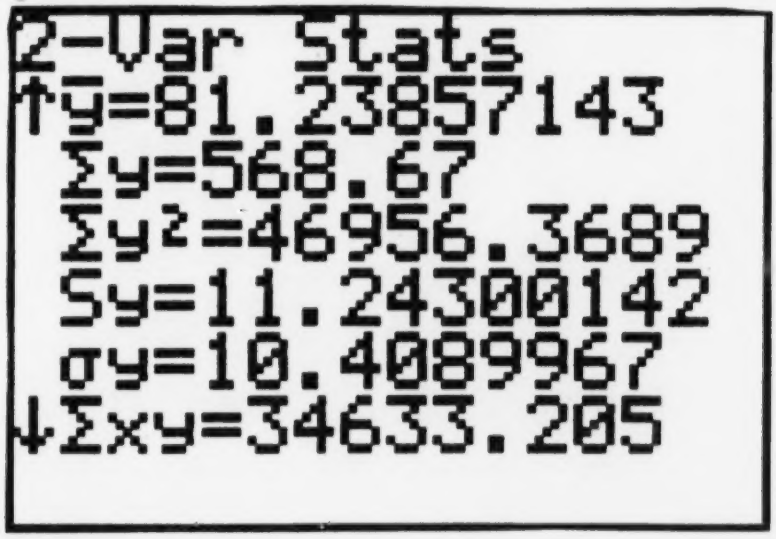


(figure 1)



(figure 2)

The mean and standard deviation of L1 and L2 are displayed in figure 2 and figure 3 respectively. Figure 4 shows each students deviation from the mean before the service option under L3 and each students deviation from the mean after tutoring is listed under L4. Figure 4 also includes the product of each students deviation before and after tutoring under L5.



(figure 3)

L3	L4	L5
-1.43	16.24	-23.22
14.57	-2.76	-40.21
-.43	-7.76	3.3368
-35.43	-14.76	522.95
-.43	5.24	-2.253
-1.93	-7.43	14.34
25.07	11.24	281.79

L3={-1.43,14.57...

(figure 4)

Figure 5 illustrates the sum of column L5 in figure 4. Figure 6 contains the calculations for r, while figure 7 and 8 illustrate the calculations for t-observed with a result of t-observed = -7.68. The analysis is completed in figure 9 with a comparison between t-critical and t-observed. The comparison shows a significant difference between the means in which case the null hypothesis is rejected because the t-observed illustrates the significant increase in test scores as a result of tutoring.

```
-23.22-40.21+3.3
4+522.95-2.25+14
.34+281.76
                756.71
```

(figure 5)

```
756.71/(7-1)
      126.1183333
(18.72)(11.24)
           210.4128
126.12/210.4
      .5994296578
```

(figure 6)

```
18.72/√7
      7.075494935
11.24/√7
      4.248320677
```

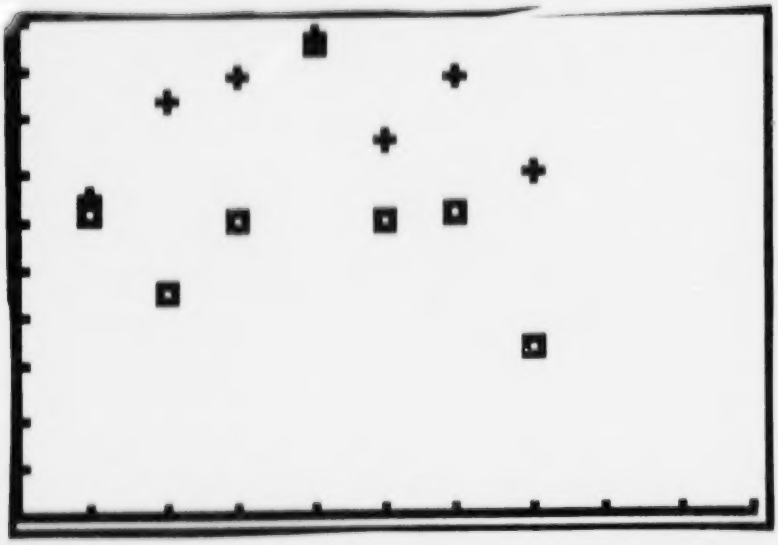
(figure 7)

```
(59.57-81.24)/√(
7.07²+4.25²-2*7.
07*4.25*.6)
     -3.831325729
```

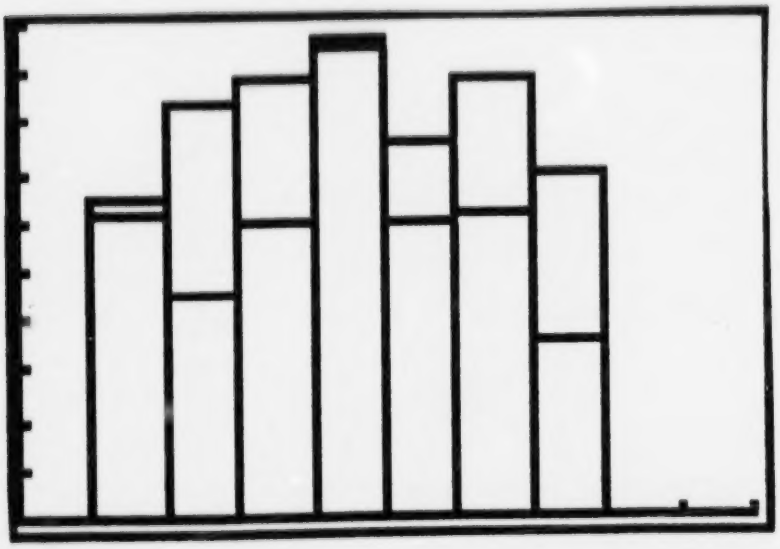
(figure 8)

```
abs (-3.83)
                3.83
3.83>3.707
                   1
REJECT NULL
```

(figure 9)



Scatterplot of test average for first seven service-learning participants in College Algebra.
+ average after student began tutoring ▫ average before student began tutoring



Histogram of test averages. The top line of each is the average after the student began tutoring, the bottom line was the students average before they started the service-learning option.

SAMPLE SYLLABI EXCERPTS:

SERVICE-LEARNING AS A REGULAR COURSE OPTION

Instructor name: Tom Golden

Instructor's office: MM-318

Instructor's telephone number: (407)632-1111 x 32314

Instructor's office hours: Mon through Thurs --- 3:00-5:00

Course name: Fundamentals of Math

Course number: MGF 1113

Textbook: *Mathematical Ideas* , by Miller and Heeren

Course content:

MGF 1113

Chapter 1: 1.1 through 1.4
Chapter 2: 2.1 through 2.4
Chapter 4: 4.2 and 4.3
Chapter 5: 5.1 and 5.3
Chapter 6: 6.1 through 6.5
Chapter 7: 7.1 through 7.7
Chapter 8: 8.1 (no circles), 8.2,8.3,8.4 (linear only), 8.7,8.8
Appendix A: The Metric System

Homework: Assigned for your benefit, it will not be graded or collected.

Testing: There will be four tests covering material as indicated below. You will be notified at least seven days in advance of each test.

Test 1: Chapters 1 and 2
Test 2: Chapters 4,5, and 6
Test 3: Chapter 7
Test 4: Chapter 8 and Appendix A

There will be a cumulative Final Exam which counts twice as much as a regular chapter test.

Missed Tests: A missed test will be make up at the time you take your final exam.

Course grade: To find your course average at the end of the semester, the sum of your three highest chapter-test scores and twice your final exam score will be divided by five. The result of this computation is your course average.

To determine your course letter-grade, your course average will be located within one of the categories below:

A 90-100 B 80-89.99 C 70-79.99 D 60-69.99 F 0-59.99

SERVICE LEARNING COMPONENT OF THE COURSE

Needed: Students willing to volunteer for a total of 16 hours in the Math lab this semester ----- tutoring students in Prep Arithmetic and (if you feel qualified) Prep Algebra.

What's in it for Me? Students who satisfactorily complete this service learning component of the course will receive an extra 100% on their list of chapter test scores.

For example:

Without service learning option

t1	t2	t3	t4	final exam
75	95	80	90	88

With service learning option

t1	t2	t3	t4	t5	final exam
75	95	80	90	100	88

What do I gotta do to sign up?

Speak with Mr. Golden after class for all details.

DAYTONA BEACH COMMUNITY COLLEGE
Instructor's Information Handout

Course: COLLEGE ALGEBRA
Instructor: Mr. Thomas C. Schlageter
Office: Building 36, Room 400-D
Phone: Campus: 255-8131, Ext. 3302
Home: 258-8977

I. General Statement

As an instructor at Daytona Beach Community College, there are certain attitudes and characteristics which I expect from each of my students. You should be aware of these, as they will dictate the method in which I handle my instruction, determine grades, assist students, and control the classroom setting. Please consider the following:

1. College students have reached a level of maturity where they are responsible for their actions.

2. You are a college student by choice not by mandate. The lifetime goals you have set for yourself are based on an increased level of formal education.

3. Someone is paying for you to attend classes at DBCC, therefore, I expect you are concerned with getting your money's worth of education.

4. The classroom should be a place conducive to learning, not to socializing.

5. If you have an honest and sincere concern for attaining your goals, you will be willing to exhaust all avenues to maximize your learning and understanding of the course-related material. This will require spending study time outside the classroom.

As your math instructor, it is my intent to provide you sufficient information, instruction and assistance that will:

1. Enable you to successfully complete your present course and

2. Provide you with the background which will enable you to be successful in any other courses which depend on your present course.

Being able to reach these goals depends to a great extent on you. Without your continued effort and cooperation, these goals will get further and further away. With these goals in mind, I would strongly encourage you to consider the following:

IOF008XB-RQG034

1. As a college student you need to discipline yourself as to your study habits. The amount and type of studying you do for my class, for the most part, is left up to you. As a mature college student, you should identify those areas which give you difficulty and then work related problems.

2. The classroom is a place for instruction and learning, not for socializing and sleeping. Disruptiveness and inattentiveness will not be tolerated in my class. Students who cannot discipline themselves in the classroom will be addressed and may be asked to leave. Don't attend class if your intent is anything other than becoming involved with the educational process. You are expected to be on time for each class and remain for the entire class. If you must leave early, it is considered only common courtesy to: (a) leave quietly and (b) give the instructor a note with your name and a brief explanation why you left early. It is also the policy of the instructor that he MAY REDUCE a student's grade based on inattentiveness, disruptiveness, leaving class early, or excessive tardies or absences.

3. If for some reason you decide to drop this course, you are advised to first contact the instructor and discuss the problem. It has been my experience that students sometimes decide to drop a course because of the difficulty they are having, when the difficulty is due to a problem which can or may be resolved. Maybe the student needs to simply get additional help from the instructor, or possibly the specific problem area is a typical problem area and once we pass it the material becomes a little easier to grasp. Don't give up too soon.

4. If your final decision is to drop (any course) you should make sure that you personally take care of withdrawing. Do not depend on anyone else to drop you, make sure that you retain your portion of the withdrawal form as evidence that you did, in fact, withdraw.

5. While each student should be concerned with their G.P.A., I would have to emphasize that in the case of math courses at DBCC (except for College Math) you should be very concerned with your level of understanding the material, since what you learn in one course becomes the basis for the next course. It is imperative, therefore, that material and information not only be learned but be retained.

6. Many of my previous comments may seem rather negative. My intent was not to be negative but rather to place emphasis on the importance of:

   (a) your attitude toward this course,

   (b) your effort toward learning the material

   (c) your cooperation with the instructor, and

   (d) staying up to date with the course.

   As your instructor, I will make every effort to assist you in the learning process (provided you properly handle your responsibilities). I strongly encourage you to make me your primary source of information and assistance in this course. Please feel free to contact me whenever you run into difficulty in this course. As every instructor does, I will post ten office hours. <u>However</u>, in no way should you perceive those ten office hours as the only time you can get assistance. I am on campus for many more hours than simply my class time and office hours and am willing to assist you whenever I can. When you feel you need extra help (outside office hours), please try to contact me and set up a time to ensure I will be in my office. In addition to assistance on campus, I do not object to your contacting me at home (my home phone is included on the handout). While I would prefer that I am your primary source of assistance in this course, you could also get assistance from other instructors, the college tutoring program, and the Math Department's tutoring labs. Again, I want to emphasize:

   (a) the importance of your responsibilities in the learning process and

   (b) my willingness to assist you

II. <u>Homework</u>

The purpose of homework is to:

   (a) apply the properties and principles discussed in class

   (b) practice solving problems

   (c) determine those areas in which you are weak, so you can improve on them

   (d) prepare yourself for quiz and test questions

Homework problems and how they are involved with grades will be discussed later.

III. Attendance

Experience has shown that there is a high correlation between regular class attendance, punctuality, and good grades. Therefore, it is expected that you will attend all classes except for medical reasons or other emergencies. Even though you may be absent, you are still responsible for all materials assigned and discussed in class. Class attendance will be recorded by the use of attendance cards. Each day that attendance is taken, it is each individual students' responsibility to get and return their attendance card. Failure to follow this procedure will result in an absence being recorded. Please be aware that your grade MAY BE REDUCED as a result of tardies, absences or leaving class early.

Attendance requirements for students receiving VA benefits are governed by VA Regulations, Title 38 Code of Federal Regulations. Accordingly, those VA students who miss six hours of classroom instruction, or who in the instructor's opinion, cannot successfully pass the course because of absences, will be officially dropped by the VA office.

IV. Progress

As a student you will be expected to show progress in the subject area. Since you will always be aware of your grades, it is your responsibility to keep up with your grade average. Should your average drop below a "C", that will constitute your official warning that you are in jeopardy of failing the course. A specific course grading procedure is included in the specific course information. There will be no make up tests or quizzes given unless you can produce a good (by the instructor's evaluation) excuse. Usually a make up will not receive full credit. You can increase your chances for taking a makeup by contacting the instructor prior to the test deadline. To be safe, contact your instructor any time you miss a test. If you have further questions, contact your instructor.

V. Course Withdrawal

It is your responsibility to officially withdraw from this course if you no longer wish to pursue a grade. I will be willing to discuss your status at any time. However, you must be certain that you are aware of the withdrawal deadline each term and that you withdraw from the course in time. IN NO SITUATION WILL THE INSTRUCTOR ISSUE A GRADE OF WITHDRAWAL. THIS POLICY IS EFFECTIVE WITH THE FALL TERM 1992 - IT MEANS THE INSTRUCTOR CAN NOT ISSUE A "WD" AT ANY TIME.

VI. Audit

Auditing a course means that you wish to attend the class, but do not wish to receive a grade. It is school policy that NO audit will be given after the official drop/add deadline.

VII. College Level Academic Skills Program (CLAST)

In an effort to produce effective writing, speaking and computational skills, your instructor will emphasize and expect college level performance of these skills by all students in this course. (See DBCC Catalog for CLAST competencies). In addition, for those pursuing a A.A. degree practicing these skills should aid you in passing the required College Level Academic Skills Test (CLAST).

VIII. Cheating

Students are encouraged to read the section on academic regulations in the current DBCC catalog, which not only deals with standards of academic program and student rights, but also with the college policy on cheating and plagiarism.

IX. Incomplete Grades

A grade of "I" will only be given at the end of this course when the student, in the judgment of the instructor, has satisfied each of the following criteria.

The student must:

1. Be making every effort to pass the course, which includes having a good class attendance.

2. Have provided the instructor with a legitimate and documented reason for not being able to complete the course work by the end of the term.

3. Have requested IN WRITING to the instructor a grade of "I."

4. Have a mathematical chance to pass the course.

X. Grading Policies

1. Testing:

There will be 3 to 6 regular tests during the term. You will be informed of a scheduled test at least one meeting prior to the scheduled test date. Each test is to be taken at the scheduled time. If you have a problem taking a test at the scheduled time, it is YOUR responsibility to contact the instructor and make arrangements to take the test PRIOR to the scheduled time. Any test taken prior to the scheduled date will receive full credit, however, any test taken after the scheduled time MAY be subject to reduced credit. Remember, it is YOUR responsibility to contact your instructor as soon as possible about any problem with taking the test on time. Keep in mind that some credit is better than no credit. The policy pertaining to early testing is with regards to regular test only - THE FINAL EXAM MUST BE TAKEN AT THE SCHEDULED TIME. Check the college calendar to make sure you do not make any plans which will create conflicts during the scheduled Final Exam Test Period.

There will be a comprehensive final exam. Every student, still enrolled in the class, will receive a grade for the final exam. If you do not take the final exam, your grade will be a zero (0).

2. Effort Grade:

Each student will receive an "Effort" grade based on the following:

A. Homework: ALL homework should be brought to class EACH DAY until you are tested on the material and sections covered. Homework cn only be turned in at the time they are asked for - late assignments will not be accepted regardless of the reasons. If you want credit for your homework it is YOUR responsibility to get it tome either before or when it is asked for. If you know you will miss class, you may have someone turn in your assignment or you may turn it in early. To receive FULL credit on homework assignments: (a) every problem on the assignment must be completed (b) you must show the proper use of the mathematical procedures - that is - all necessary work must be shown.

B. Quizzes: Quizzes may be verbal or written. These quizzes are intended to check whether students are attentive in class and remaining current with homework assignments. Missed quizzes CAN NOT be made up - regardless of the reason.

C. **Attendance: Remember that attendance records are based on each student's own responsibility.**

D. Read "Effort Grade Explanation."

3. Effort Grade Explanation:

The primary purpose of the EFFORT GRADE is to encourage students to attend and be prepared for class and to stay up with the material covered in the course. In other words – Be Concerned About Your Success In This Course. Verbal expressions of concern and commitment are easy to come by, however in a math course they mean very little unless they are backed up with adequate actions. This grade measures your effort, concern for passing and ability to follow instructions more than it measures your pure mathematical ability. Homework for example, is checked as to whether you made an adequate effort – your answers should be correct since you have most of them in your text. Quiz questions will not be intended to trick you or to test your maximum level of understanding, instead they are used to check whether you are paying attention, following instructions and staying up with the material. Attendance only becomes a problem when absences become excessive. If you have excessive absences, you need to make a MATURE assessment of your situation. In most cases, excessive absences result in insufficient understanding and lower grades. In such instances, I believe it would be wise to withdraw. If you have legitimate excuses for being absent you might try to appeal for a "DROP." Please keep in mind that this grade is simply an "optional" grade. You MAY use it to substitute for a regular test. In fact it is possible to have an effort grade of zero "0" and still have a class average of 100%.

Based on the above information, you need to completely understand (not necessarily agree with) the following:

A. A missing signature (initials) on the roll sheet counts as an absence. It makes no difference why you did not initial. It is your responsibility to make sure you sign each day roll is taken.

B. There are no "excused" or "unexcused" absences.

C. No credit is given for any homework not turned in when it is asked for – regardless of the reason.

D. There are no make-ups for missed quizzes.

4. Grades

A. Pre-Final Grade (PFG): Your PFG is the letter grade which corresponds to the simple average of your regular test scores. How your Effort Grade is to be used will be explained in class - make sure you understand how the effort grade will be used.

B. Final Grade: Your final grade will be determined after the final exam as follows:

1. if your Final Exam Score is below 70% than your Final Grade is the simple average of all regular tests and the Final Exam Score (the Final Exam counts as one test)

2. if your Final Exam Score is 70% or above, but not at least one letter grade higher than your PFG, then your Final Grade is your PFG

3. if your Final Exam Score is 70% or above and is at least one letter grade higher than your PFG, then your Final Grade is one letter higher than your PFG.

C. NO SCORES WILL BE ROUNDED OFF - for example 79.9999 is recorded as a 79 which is a C+

D. The scale for letter grades is as follows:

A	90 and up
B+	87 - 89
B	80 - 86
C+	77 - 79
C	70 - 76
D+	67 - 69
D	60 - 66
F	0 - 59

** THIS GRADING PROCEDURE IS SUBJECT TO CHANGE

5. Returned Tests, Bonus Points, Minus Points

A. Tests: When tests are returned to you, you should look them over as soon as possible and correct your mistakes and see if you feel there were any mistakes in grading the test. If you have any questions regarding your test (especially if you feel there is a mistake in the grading) bring them to Mr. Schlageter's attention as soon as possible. HOWEVER, in an effort to have such conversations remain confidential, please make sure that any discussions related to grades are conducted only in Mr. Schlageter's office. Keep in mind that SOMETIMES partial credit may be awarded if Mr. Schlageter feels that you have indicated an understanding of the major concepts involved with the problem. Once a test is returned to you it is still possible to improve your score if you can provide Mr. Schlageter with sufficient information to indicate a mistake in grading, please do as ASAP.

B. Bonus Points: Bonus points MAY be awarded for exhibiting extra effort and/or concern for learning the material and passing the course. Some ways to exhibit this effort and/or concern are: being an active and positive participant in the classroom discussions and learning process, seeking assistance from the instructor with problem areas (low test scores indicate the existence of problem areas) and following course policies (including attending class). Bonus points will be added to your effort point total - remember that the highest effort grade you can make is 100%.

C. Minus Points: Minus points MAY be deducted for any unacceptable behavior or conduct or not adhering to the class policies stated in your handout. Some specific areas which may result in Minus Points are: (1) sleeping in class (2) disruptiveness of any form (3) not paying attention in class (including doing work not related to the discussion) (4) not having your book open to the lesson during the lecture (prepare to leave after the lesson not during it) (5) leaving class early without notifying the instructor of the reason, before leaving. Minus points will be deducted from your total test points at the end of the term before your grade is figured. Minus points MAY be removed if sufficient improvement is made to correct the behavior or conduct.

COURSE: MAC 2311, Calculus I (4 semester hours)

PREREQUISITE: Placement through placement test or completion of MAC 1140 and MAC 1114 with a grade of "C" or better, or permission of chairperson.

REQUIRED MATERIAL: Calculus, 5th Ed., Larson, Hostetler, Edwards
A graphing calculator.

COURSE DESCRIPTION: Topics include: limits and continuity, basic rules of differentiation and applications of differentiation, basic techniques of integration, differentiation and integration of transcendental functions.

INSTRUCTOR: Julie Miller

TELEPHONE: 255-8131, extension 3415

OFFICE: Building 36, Room 400C

OFFICE HOURS: Monday:
Tuesday:
Wednesday:
Thursday:
Friday:

GRADING: Your grade will be based on the average of 4 or 5 tests, a final exam, and a series of assignments and quizzes. You will also be required to do a group project and presentation which will be graded.

Grading Scale:

90-100	A	70-76	C
87-89	B+	67-69	D+
80-86	B	60-66	D
77-79	C+	Below 60	F

SERVICE LEARNING: In addition to your tests and assignments, you may receive an additional grade for participation in the Service Learning Program. This is a voluntary tutoring program where students in upper division classes tutor and mentor students in developmental math classes. Please see the handout on Service Learning for additional information.

SERVICE LEARNING

Description of the Program

The DBCC Service Learning program enables students to enhance their understanding of mathematics through a volunteer tutoring program. Students in advanced classes (College Algebra and above) will be given the opportunity to tutor students in lower level classes. In most cases, the tutor will be paired with a student for one-on-one tutoring. Otherwise, a tutor may be assigned to work in an open tutoring lab, either in the Learning Center or in the Math Lab.

Responsibilities of the Tutors

Tutors will be asked to volunteer one hour a week. Tutors will call the student to be tutored so that a mutually convenient meeting time can be arranged. The tutor will work with the student and keep a journal documenting each tutoring session. The journal entries might include: the date and time of the session, the name of the student tutored, the material you covered, problem areas for either the student or the tutor, and any other reflections that come to mind. Journal entries should be written in complete sentences, using good grammar and standard English. The journals will be evaluated at the discretion of the individual instructor.

Benefits of Participation

The tutors will obviously benefit by reinforcing their understanding of basic arithmetic and algebra. It is said that if an individual can verbalize and explain a concept to someone else, he/she <u>really</u> understands that concept.

If you are conscientious in your tutoring and in keeping your journal, the Service Learning Program will improve your final average in your current math class. You will be given a grade for your efforts. The percentage that Service Learning will contribute to your final course average will be left up to the instructor.

Service Learning is a community service program. Participation in this activity can be a nice addition to a resume, a job application, a scholarship application, or an application to another academic institution.

Tutors will feel great satisfaction that they are helping other students to be successful in mathematics.

If you are interested in tutoring for the Service Learning Program, please fill out the following information.

Name:_____ Term:_____ Year:_____

Social Security Number:_____ Phone:_____

Present Math Class:_____ Instructor:_____

Best Days and Times You Can Tutor:_____

If you are interested in tutoring for the Service Learning Program, please fill out the following information.

Name:_____ Term:_____ Year:_____

Social Security Number:_____ Phone:_____

Present Math Class:_____ Instructor:_____

Best Days and Times You Can Tutor:_____

If you are interested in tutoring for the Service Learning Program, please fill out the following information.

Name:_____ Term:_____ Year:_____

Social Security Number:_____ Phone:_____

Present Math Class:_____ Instructor:_____

Best Days and Times You Can Tutor:_____

SERVICE LEARNING OPTION

Would you like to:

- ***Achieve maximum understanding in your Math Class?***
- ***Receive community service credit?***
- ***Increase your final average in this Math course?***

If yes, then...DBCC Mathematics Department's Service Learning Option is for you!

The Mathematics Department is offering a service learning option for your math course that will enhance your grades and understanding of material. The concept combines community/public service with classroom work to provide skill building, reflection, and generalization of principles that will help you learn more effectively. This can be done by **agreeing to tutor in the learning lab on your campus.**

Your responsibilities will be:

- Inform your instructor that you want this extra credit option.
- Agree to tutor 16 hours at the learning center on your campus. Two of these hours will be for orientation and 14 hours will be for tutoring the students -- as a volunteer. The time of tutoring can be at your discretion, agreed upon by you and the lab center's coordinator. BUT once a time is set, you are expected to be there. You should schedule approximately 1 hour per week.
- Be on time for your tutoring sessions.
- Complete the 16 hours required.
- Keep a written journal of each tutoring session that will be evaluated by your instructor for a grade. The journal should include the date, starting and ending time of the sessions, who you tutored, the topic or concept that was tutored, what worked as an explanation and what did not work, and any other reflections you might have.

Your instructor's responsibilities will be:

- Give you an extra test grade that will be an accumulation of points assigned to the journal, the sixteen (16) hours completed, and the evaluation given by the learning lab. The sum of these scores will be listed as an extra test grade on your grade sheet, then averaged in as if it were an actual test grade.

  For example:

  Scores on tests were 89,91,81,95 and 90. Add the 100 points for the service learning experience and then divide the total by six. The average would be 91.

  Without the service learning experience, the five tests would have an average of 89.2. That's the difference between an "A" and a "B."
- Help you to decide which courses you are able to tutor. Normally, if you are in College Algebra, you would be able to tutor MAT0002 Everyday Math, MAT0024 Elementary Algebra, and MAT1033 Intermediate Algebra. However, sometimes you might be more qualified to tutor the first two courses only. If you are having difficulty tutoring, you should seek advice from your instructor and the lab assistant or coordinator.

The learning lab's responsibilities will be:

- Set up a time when you are able to tutor.
- Help you to decide which courses you are able to tutor.
- Give you an evaluation near the end of the semester.

Service Learning Option

Student _____ Term _____ Year _____

Social Security Number _____ Phone number _____

Present Math Class _____ Section _____

Classes this student should be able to tutor:

Instructor _____

MAC 1104 **TERM 954**
COLLEGE ALGEBRA

Prerequisite: MAT 1033 Intro. to College Algebra or equivalent.

Educational Materials:
Precalculus, 3rd edition, Larson and Hostetler. Scientific calculator.

Objectives:
To prepare the student for further study in mathematics, science and other related disciplines.

Course Description:
An in-depth course in linear and quadratic equations and inequalities and their systems, exponential, logarithmic and other functions, matrices and determinants, complex numbers, theory of equations, sequences and series, and the binomial theorem.

Instructor: Jacci Wozniak Office - MM315 Phone (407)632-1111 x32311

Evaluation:
A. 4 tests = 60%
B. Homework, classwork, attendance, participation, group work = 25%
C. Final exam = 15%

Service Learning Option:
College Algebra students have the option to do volunteer tutoring for extra credit. Completion of the service learning assignment will allow students to drop their lowest test score.

This volunteer work will involve 16 hours of tutoring at the CAI lab on the Melbourne Campus or with a local K-12 teacher. In addition you will be asked to evaluate your tutoring experience at the end of the term. The total hours breaks down into one scheduled hour each week at a predetermined time of your choice. There will usually be another tutor or supervisor available to assist you if you run into any problems or questions you cannot answer.

To get started contact the service learning office on the Melbourne Campus at 632-1111 x 33150,or the Cocoa Campus at x62410.

CALCULUS III
MAC 2313
Course Syllabus
(SESSION 2, 95-96)

Course Description:
Prerequisite: Completion of MAC 2312 with a grade of C or better. Topics include vectors, vector functions, surfaces, coordinate systems and drawings, functions of two or more variables and their derivatives, applications of partial derivatives, multiple integrals and vector fields and integration

CLAST Competencies/ Competencies of a Valencia Graduate:
This course reinforces many of the arithmetic and algebra CLAST competencies and will provide instruction in several additional algebra competencies for CLAST.

Competencies of a Valencia Graduate:
1. Think critically and make reasoned choices by acquiring, analyzing, synthesizing, and evaluating knowledge.
2. Read, listen, write and speak effectively.
3. Understand and use quantitative information.

CLAST Competencies:
1. Mathematics skills (arithmetic and algebra skills)
2. Reading skills (literal and critical comprehension skills)
3. English language skills (word choice and grammar, spelling, capitalization, and punctuation skills)

Instructor: Jolene Rhodes

Office: 2-109

Phone: 299-5000 x 2335

Office Hours: 10:20 - 11:45 am TR, 1:00 - 2:00 pm MW, 10:00-11:00am F

Required Course Materials:
Calculus: Graphical, Numerical, Algebraic, Finney, Thomas, Demana, Waits. Graphing calculator. A TI-82 calculator will be used in instruction. If you already have another model, then you must accept the responsibility of learning to use your model.
Optional Student Solutions manuals are available at the bookstore and the library.

Attendance: Attendance is expected of all students. The student is responsible for doing any assignment that is made during their absence. At the discretion of the instructor, a student may be withdrawn for excessive absence.

Homework: There will be recommended assignments which will not be collected or graded. Questions about the recommended homework assignment will be answered at the beginning of each class. If your questions are not answered at this time or you wish to look at problems not on the list, please see me in my office. To be successful in the class it is important to set aside time between each class meeting to work on the assignment. Homework to be collected for grading will be assigned periodically in class.

Evaluation:
Your grade will be determined by grades on tests, class activities, and the final exam.

Tests: There will be 4 in-class exams (Each worth 100 points.) There will also be 1 50 point test.

Class Activities: There will be a variety of activities, homework, worksheets, and quizzes given. Quizzes will be given most Thursdays and each will be worth 10 points. The highest 90% of these assignments will count as 150 points.

Final Exam: There will be a comprehensive final exam given during the scheduled final exam period. This will be worth 100 points. The final exam may be used to replace your lowest exam score.

Grade Calculation:

89% - 100% A
79% - 88% B
69% - 78% C
59% - 68% D
Below 59% F

Make-up policy: With a valid reason and with the instructor's permission granted prior to the exam, exams may be specially scheduled. You are allowed to make up a maximum of one exam during the semester. Failure to take the make-up exam at the scheduled time will result in a zero on the missed exam. Other assignments will <u>not</u> be accepted late and may <u>not</u> be made up.

Academic Honesty: You are expected to do your own work on exams. Providing information to another student or receiving information concerning exam content is considered cheating. The first instance of this will result in a grade of "0" for that exam. The second instance will result in a grade of "WF" for the course.

Withdrawal Deadline: The withdrawal deadline for session 2 is March 22, 1996. If you withdraw by this deadline, you will receive a "W". After the deadline, you will receive a "WP" or "WF".

Disclaimer: Changes in this syllabus may be made at the discretion of the instructor.

MAC 2313 - Calculus III
Service Learning Option

The purpose of this option is to review the background material from Calculus I that is used in Calculus III, while providing a valuable resource to the Calculus I students. Participants should keep a record of the time spent tutoring, the main ideas covered, and a log of any new concepts or connections discovered while tutoring. Also, participants should reflect on the experience including any positive or negative reactions or feelings toward tutoring, and whether the experience was of value either or both parties.

If you are interested in participating in the service learning option, please fill out the form below and you be assigned at least one student to tutor.

I, _____, agree to tutor a Calculus I student on Valencia's East Campus. I understand that I will earn 2 quiz points for every hour that I tutor. I may tutor a minimum of 10 hours to a maximum of 25 hours during the semester. I understand that at least half of these hours must be completed by the withdrawal deadline of March 22, 1996. I will remain on Valencia's East Campus while tutoring.

Signature_____

Date_____